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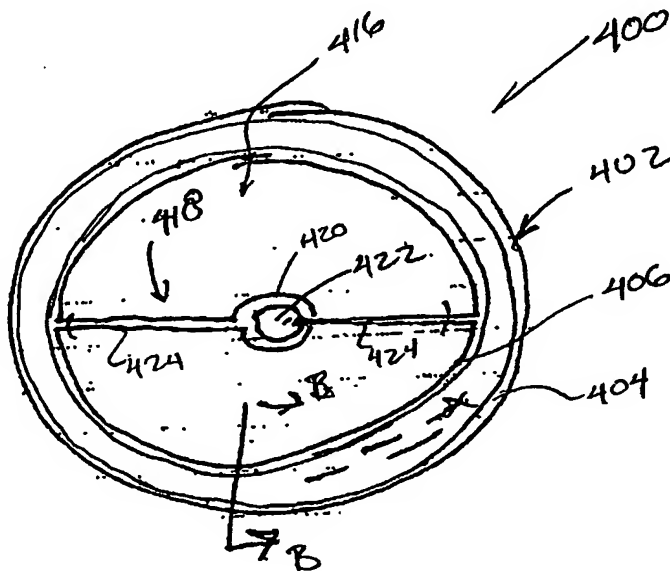
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- (71) Applicant (*for all designated States except US*): **TYCO HEALTHCARE GROUP, LP** [US/US]; 150 Glover Avenue, Norwalk, CT 06856 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **ORBAN, Joseph, P., III** [US/US]; 78 Fallow Street, Norwalk, CT 06850 (US). **NOLAN, Timothy** [US/US]; 171 Journey's End, South Salem, NY 10590 (US).
- (74) Agent: **AUDET, Paul, R.**; Tyco Healthcare Group LP, 150 Glover Avenue, Norwalk, CT 06850 (US).
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(54) Title: **ANNULAR SUPPORT STRUCTURES**



(57) Abstract: Reinforcing lumen rings are configured and adapted for use in conjunction with a circular endoscopic stapling instrument having a staple cartridge assembly and an anvil assembly. The reinforcing lumen rings maintain anastomotic lumen, e.g. as formed by the circular endoscopic stapling apparatus, in an open condition. The reinforcing lumen rings can include an annular ring having an outer terminal edge and an inner terminal edge, the outer terminal edge having a diameter which is substantially equal to an outer diameter of the staple cartridge assembly and the inner terminal edge having a diameter which is substantially equal to an inner diameter of the staple cartridge assembly.



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INTERNATIONAL SEARCH REPORT

International Application No.
PCT/US 03/19331

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61B17/115 A61B17/072

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 594 148 A (UNITED STATES SURGICAL CORP) 27 April 1994 (1994-04-27) column 1, line 48 - line 55 column 3, line 26 - line 29 column 4, line 8 - line 31	1-3, 6-10, 12-15
A	US 6 045 560 A (HAIN MATTHEW ET AL) 4 April 2000 (2000-04-04) column 4, line 40 - line 51 figure 1	14, 15
A	DE 199 24 311 A (BERSTEIN EMMANUIL ;RAU WALTER A (DE); ZIKOW ANDREJ (RU); PERELMAN) 30 November 2000 (2000-11-30) column 5, line 43 - line 57 figure 3	4, 5

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

*** Special categories of cited documents:**

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

11 December 2003

Date of mailing of the international search report

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

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INTERNATIONAL SEARCH REPORT

International application No. ~
PCT/US 03/19331

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 16-22
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4, 5
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-3,6-10,12-15

Rigid annular pledget capable of retaining wound closure material, to be releasably fixed to the stapling instrument.

2. Claims: 1,4,5

Annular pledget capable of retaining wound closure material additionally comprising a support spoke and hub extending diametrically across the inner wall.

3. Claims: 1,11

Annular pledget capable of retaining wound closure material, said pledget being made of Steel or Titanium.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International Application No

PCT/US 03/19331

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0594148	A	27-04-1994	CA	2108605 A1	22-04-1994
			EP	0594148 A1	27-04-1994
US 6045560	A	04-04-2000	US	5542594 A	06-08-1996
			US	5908427 A	01-06-1999
			US	5964774 A	12-10-1999
DE 19924311	A	30-11-2000	DE	19924311 A1	30-11-2000